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COMPARING MEDICATION PERSISTENCE AMONG PATIENTS WITH TYPE 2 DIABETES USING SODIUM-GLUCOSE COTRANSPORTER 2 INHIBITORS OR GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONISTS IN REAL-WORLD SETTING

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Background

Because of its high and growing prevalence, and the associated macro- and **micro-vascular complications** and mortality, diabetes is a major public health issue worldwide.
Recently, randomized controlled trials showed that some classes of antidiabetic drugs, i.e., glucagon-like peptide-1 receptor agonists (**GLP1-RA**) and sodium-glucose cotransporter-2 inhibitors (**SGLT2-I**), are able to reduce the incidence of cardiovascular (CV) events among patients with type 2 diabetes. However, **low adherence** because of side effects could potentially affect their protective action in routine clinical practice, with significant clinical and **public health implications.**

Aim

To **assess and compare the persistence** with drug therapy between patients treated with GLP1-RA and SGLT2-I therapy in a **large cohort of patients with type 2 diabetes**.

Methods

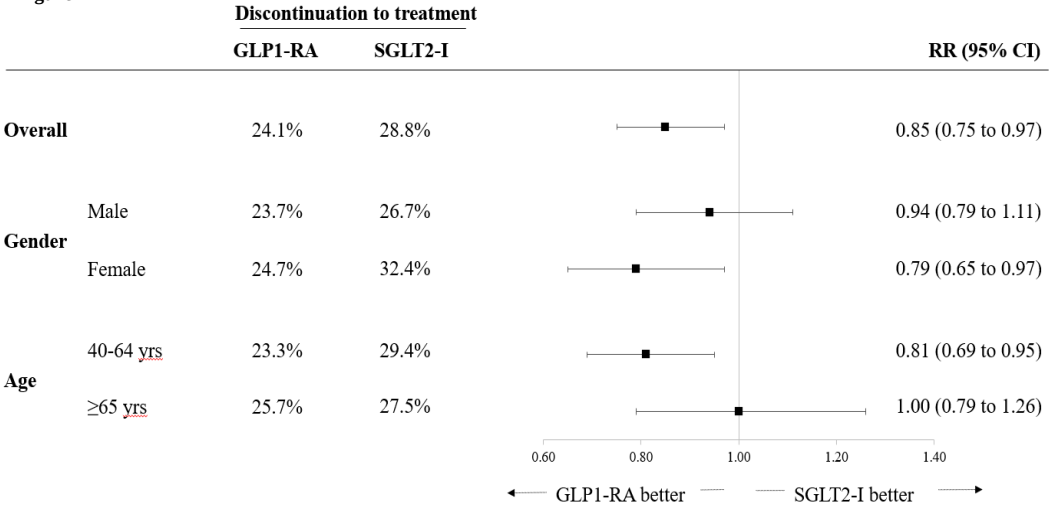
The 126,493 residents of **the Lombardy Region** (Italy) aged ≥40 years newly treated with metformin during 2007-2015 were followed until 2017 to identify those who started therapy with GLP1-RA or SGLT2-I. 1-year persistence was measured as days of continuous therapy with no gaps >60 days between consecutive refilled prescriptions T**wo outcomes** were considered: **discontinuation from antidiabetic drug of interest** (GLP1-RA or SGLT2-I) and **from any antidiabetic drug therapy**. To make GLP1-RA and SGLT2-I users more comparable, a **1:1 matched cohort design** was adopted. Matching variables were sex, age, and adherence to the first-line therapy with metformin.
Log-binomial regression models were fitted to estimate the propensity to 1-year treatment persistence in relation to the therapeutic strategy. Adjustments were made for baseline covariates, such as comorbidities and co-treatments.

Two **sensitivity analyses** were performed. First, to avoid the arbitrary nature of the threshold used to assess treatment persistence (i.e., 60 days), in a secondary analysis we used different thresholds to define drug discontinuation. Second, to account for the possible difference in the clinical status and other characteristics between patients on GLP1-RA and SGLT2-I, data were also analysed according to the high-dimensional propensity score matching approach [1].

Results

The final matched cohort was composed by 1,276 GLP1-RA─SGLT2-I pairs. About 24% (307 patients) and 29% (368 patients) of cohort members respectively on GLP1-RA and SGLT2-I discontinued initial antidiabetic drug during the first year after the index date. As shown in **Figure 1**, compared with patients starting on SGLT2-I, those on GLP1-RA had 15% (95% CI, 3% to 25%) lower risk of discontinuation of the treatment.

Figure 1



About 6.2% (79 patients) and 12.5% (160 patients) of cohort members respectively on GLP1-RA and SGLT2-I interrupted any antidiabetic drug therapy during the first year after the index date. Compared with patients starting on SGLT2-I, those on GLP1-RA had 45% (95% CI, 28% to 57%) lower risk of discontinuing antidiabetic drug therapy. **Persistence was better in patients on GLP1-RA in each stratum of age, sex, and cardiovascular disease.**
The main findings did not change substantially by modifying the threshold used to define treatment discontinuation and adopting the high-dimensional propensity score algorithm.

Conclusions

In conclusion, our observational investigation confirms that **persistence to GLP1-RA and even more to SGLT2-I is suboptimal in clinical practice**. Understanding the reasons underlying this issue will likely help to develop interventions aimed to improve the management of the disease. utilization and costs. These efforts would most likely substantially reduce long-term outcomes, healthcare resource utilization and costs.

Reference

[1] Schneeweiss S, Rassen JA, Glynn RJ et all. High-dimensional propensity score adjustment in studies of treatment effects using health care claims data. Epidemiology. 2009;20:512-522